

IN THE CLAIMS

Claim 1 (Previously Presented): A QoS controller, in an IP network having one or more routers, comprising:

a storing unit configured to assign a first bit area and a second bit area within a field in an IP header of an IP packet, and store first bits for implementing bandwidth control at said routers into said first bit area and second bits that indicate a path for routing the IP packet to a destination router into said second bit area, wherein said first bits and said second bits do not interfere with each other within the field in the IP header; and

a reporting unit configured to report to said routers said first bits and said second bits stored by said storing unit.

Claim 2 (Original): The QoS controller as claimed in claim 1, wherein said storing unit further comprises a storing-control unit configured to change a ratio of said first bit area to said second bit area so as to store said first bits into said first bit area and said second bits into said second bit area.

Claim 3 (Original): The QoS controller as claimed in claim 1, further comprising a database unit,

wherein said database unit represents a first bit sequence as a router-control class for controlling said routers, and a second bit sequence as a routing class for routing at said routers; and

stores, in accordance with a type of the IP packet, a relationship between said router-control class and said routing class,

and wherein said reporting unit reports to said routers the relationship, stored at said database unit, between said router-control class and said routing class.

Claim 4 (Original): The QoS controller as claimed in claim 3, further comprising:  
a traffic-monitoring unit configured to monitor traffic conditions at said routers; and  
a corresponding-relationship updating unit configured to change the relationship,  
stored at said database unit, between said router-control class and said routing class, based on  
said monitored traffic condition,

wherein said reporting unit reports to said routers the relationship changed by said  
corresponding-relationship updating unit.

Claim 5 (Previously Presented): A method of controlling QoS in an IP network  
having one or more routers, comprising the steps of:

assigning within a field in an IP header of an IP packet a first bit area and a second bit  
area, wherein said first bit area and said second bit area do not interfere with each other  
within the field in the IP header;

storing first bits for implementing bandwidth control at said routers into said first bit  
area, and storing second bits that indicate a path for routing the IP packet to a destination  
router at said routers into said second bit area;

reporting to said routers said first bits and said second bits stored; and

causing, according to said reporting, said routers to start controlling and routing at  
said routers based on said reported first bits and said reported second bits stored.

Claim 6 (Previously Presented): A router in an IP network, comprising:

a control and relay unit configured to control and route at said router in accordance  
with first bits for implementing bandwidth control at said router stored in a first area assigned  
within an IP-header field of an IP packet, and second bits that indicate a path for routing the  
IP packet to a destination router at said router stored in a second area also assigned within

said IP-header field of the IP packet, wherein said first bits and said second bits do not interfere with each other within said IP-header field of the IP packet.

Claim 7 (Original): The router as claimed in claim 6, which is arranged at a boundary of said IP network, further comprising a setting unit configured to set, based on a type of said IP packet, a router-control class to said first bits and a routing class to said second bits.

Claim 8 (Original): The router as claimed in claim 6, further comprising:  
a traffic-measuring unit configured to measure volume of traffic flowing into said router; and  
a traffic-condition reporting unit configured to report said measured volume as a traffic report to a QoS controller connected to said IP network.